Python – Coding Practices

Note: You can use the IDE that you like, or as explained in class PyCharm or Jupyter Notebook.

1) Make a program that asks for a note, between zero and ten. Show a message if the value is invalid and keep asking until the user enters a valid value.

2) Make a program that reads a username and its password and does not accept the same password as the username, showing an error message and asking for the information again.

3) Make a program that reads and validates the following information:
Name: greater than 3 characters.
Age: between 0 and 150.
Salary: greater than zero.
Gender: 'f' or 'm';
Marital Status: 'm', 'w', 's', 'd', "s";

Note: Use the len(string) function to find out the length of a text (number of characters).

4) Assuming that the population of country A is in the order of 80,000 inhabitants with an annual growth rate of 3% and that the population of B is 200,000 inhabitants with a growth rate of 1.5%. Make a program that calculates and writes down the number of years it takes for the population of country A to exceed or equal the population of country B, maintaining the growth rates.

5) Make a program that asks for 10 whole numbers, calculate, and display the number of even numbers and the number of odd numbers.

6) Write a program that asks for an integer and determine whether it is a prime number. A prime number is one that is divisible only by itself and by 1.

7) In an election there are three candidates. Make a program that asks for the total number of voters. Ask each voter to vote and at the end show the number of votes for each candidate.

8) Make a program that receives the amount of a debt and show a table with the following data: debt amount, interest amount, number of installments and installment amount.

Interest and the number of installments follow the table below:

Number of Installments || % of Interest
01 || 0
03 || 10
06 || 15
09 || 20
12 || 25

Sample output from the program:

Debt	Interest	N# Installments	Installment Amount
$1,000.00	0	01	$1,000.00
$1,100.00	100	03	$366.00
$1,150.00	150	06	$191.67

9) Write a program that reads an indeterminate amount of positive numbers and counts how many of them are in the following ranges: [0-25], [26-50], [51-75] and [76-100]. Data entry must end when a negative number is read.

10) In a gymnastics competition, each athlete receives votes from seven judges. The best and worst grades are eliminated. Your grade is the average of the remaining votes. You must make a program that receives the gymnast's name and the grades of the seven judges achieved by the athlete in his presentation and then inform his average, as described above (remove the best and worst jump and then calculate the average with the remaining notes).

Notes are not reported ordered. An example of program output should look like the example below:

Athlete: Richard Brenon
Grade: 9.9
Grade: 7.5
Grade: 9.5
Grade: 8.5
Grade: 9.0
Grade: 8.5
Grade: 9.7

Result:

- Athlete: Richard Brenon
- Best grade: 9.9
- Worst grade: 7.5
- Average: 9.04